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A2 (54) Title: POLYAMIDES AND POLYAMIDE COMPLEXES FOR DELIVERY OF OLIGONUCLEOTIDE DECOYS

WO 2005/084180 A2 (57) Abstract: The present invention provides a new class of non-viral transduction vectors that can be used for both *in vivo* and *in vitro* applications. In particular, these vectors can be used for gene transfer applications. These new gene transduction vectors can achieve transfer efficiencies far greater to commercially available polymeric and liposomal gene transfer vectors while maintaining little or no toxicity *in vitro*. Their low *in vitro* toxicity makes them ideal candidates for *in vivo* use. The present invention also provides a gene transfer vector that has comparable efficiency to a viral vector without the potential for a life-threatening immune response. Furthermore, the unique polycationic structure of these polymers associates with many suitable biologically active molecule, including oligonucleotides and polypeptides and other compounds that poses multiple cationic sites. The polymer can act as a delivery vehicle for the associated biologically active molecule, *in vivo* or *in vitro*, to the cells of interest for the biologically active molecule. Complexes according to the invention or portions thereof, can comprise a cellular delivery molecule or agent that can facilitate the translocation of the complex or portion thereof into cells. In some embodiments, cellular delivery molecules for use in the present invention may comprise one or more one or more polymers of the present invention, e.g., polyamides, dendritic macromolecules (polymers comprising an oligoamine shell and a cyclodextrin core), and carbohydrate-containing degradable polyesters.